501.43144X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Toshihiko MURAKAMI

Serial No.:   10/663,732

Filed: September 17, 2003

For: DATA TRANSFER METHOD

PETITION TO MAKE SPECIAL
UNDER 37 CFR 1.102(d) and MPEP. §708.02, VIII

MS Petition
Commissioner for Patents   December 7, 2004
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

1. Petition

Applicants hereby petition to make this application **Special**, in accordance with 37 CFR §1.102(d) and MPEP 708.02, VIII. The present invention is a new application filed in the United States Patent and Trademark Office on September 17, 2003 and as such has not received any examination by the Examiner.

2. Claims

Applicants hereby represent that all the claims in the present application are directed to a single invention. If upon examination it is determined that all the claims presented are not directed to a single invention, Applicants will make an election without traverse as a prerequisite to the granting of special status.

-1-

3. Search

Applicants hereby submit that a pre-examination search, a copy of which is attached, has been made by a professional searcher.

The field of search covered:

Class Subclasses

711   114, 162, 202

The above subclasses represent areas deemed to contain subject matter of interest to one or more of the search features. Additionally, a computer database search was conducted on the USPTO systems EAST and WEST; a keyword search was conducted in Class 710, subclasses 1, 5, 8 and 72; and Class 711, subclasses 111, 112, 113, 151, 163 and 206; as well as database searching for foreign patens and non-patent literature. Examiner Jack Lane in Class 711 (Art Unit 2188) was consulted in confirming the field of search.

4. Copy of References

A listing of all references found by the professional searcher is provided by a Form PTO-1449 and copies of the references and the Form PTO-1449 are submitted as part of an Information Disclosure Statement (IDS) filed on even date.

5. Detailed Discussion of the References and Distinctions Between the References and the Claims

Below is a discussion of the references uncovered by the search and cited in the IDS filed on even date that appear to be most closely related to the subject matter encompassed by the claims of the present application, and which discussion particularly

points out how Applicants' claimed subject matter is distinguishable over those references. All other references uncovered by the search and cited in the IDS filed on even date are **not** treated in detail herein.

a.   Detailed Discussion of the References

Honda et al (U.S. Patent Publication Application No. 2004/0103261) shows a system and method of controlling data transfer between a host system and a plurality of storage devices. The computer system has a plurality of host computers (1), a plurality of storage devices (3), a virtualization controller (2) that is connected with the host computers (1) and storage devices (3), and a managing unit (4). The host computers (1), storage devices (3) and the managing unit (4) are connected with the virtualization controller (2) via a network (5), while the managing unit (4) is connected with the virtualization controller (2) via a network (5,6). See Figs. 1, 3-11 and paragraphs [0009]-[0012], [0044]-[0048].

Fujiwara et al (U.S. Patent No. 6,557,073) shows a storage apparatus including a virtual storage area for storing a virtual tape volume, a data transfer control program for controlling the data transfer among the virtual storage area. The data transfer control program forms groups of virtual tape volume having identical attributes. See Figs. 2-6, col. 2, lines 20-40 and col. 4, line 46 to col. 6, line 49 and summary.

Fujimoto et al (U.S. Patent Publication Application No. 2004/0103244) shows a system for managing a method for cluster-type storage including a plurality of data caching control units, having management units (60) that generate a table in which virtual volume (2) numbers (632) are assigned, on the basis of the tables in all the control clusters (71). Then, a copy of the portion related to each control cluster (71)

is transferred from the table to the target data caching control unit (21). See Figs. 1, 4, 5 and 16-18 abstract and paragraphs [0021]-[0022].

Rajan et al (U.S. Patent Publication No. 2004/0030822) shows a storage virtualization selection technique that automates a virtualization selection process including layering virtual disk objects on a file system comprising an organizing storage of the file system within volumes created among the managed disks, and creating the virtual disk as a storage object within one of the volumes. See Figs. 2, 3 and 6 and paragraphs [0021]-[0025].

White (U.S. Patent No. RE36,989), Hashimoto et al (U.S. Patent No. 5,787,487) Dekoning et al (U.S. Patent No. 6,567,889); Bober (U.S. Patent No. 6,718,372); Idei et al (U.S. Patent Application Publication No. 2003/0177330); George et al U.S. Patent Application Publication No. 2003/0182501); Eguchi et al (U.S. Patent Application Publication No. 2003/0221063); Oota (U.S. Patent Application Publication No. 2004/0064633); Serizawa (U.S. Patent Application Publication No. 2004/0098537); and Saito (Japanese Patent Number 03-288934) shows data transfer methods in virtualization of disk storage systems.

b.   Distinctions Between the References and the Claims

The present invention as recited in the claims is not taught or suggested by any of the above noted references whether taken individually or in combination with each other or in combination with any of the other references now of record.

The present invention as recited in the claims is directed to a data transfer method computer system and relay device wherein the computer system includes a plurality of computers, a plurality of memory devices, the relay device which

connects the computers and the memory devices and a management device which manages the computers, the memory devices and the relay device.

According to the present invention, the management device sets virtual memory areas of the memory device for the computers and holds information on contents of the setting as first information. The relay device holds second information which is created based upon the first information. The virtual memory areas correspond to the memory areas in the respective memory devices or a memory area formed by combining memory areas in the memory devices. The relay device selects one virtual memory area from the second information and when the selected virtual memory area is a memory area formed by combining the memory areas in the memory devices as an opportunity, performs data transfer among the memory devices.

The above described features of the present invention as recited in the claims are not taught or suggested by any of the references of record whether taken individually or in combination with each other. Particularly, for example, the above described features of the present invention are not taught or suggested by Honda. Honda teaches a system and method of controlling data transfer between a host system and a plurality of storage devices. As taught by Honda, a virtualization controller is connected between the host computers and the storage devices and a managing unit such that the virtualization controller controls data transfer process in a way such that the host computer can identify the destination volume using the same identification information that it uses to identify the source volume.

Thus, as is clear from above, the features of the present invention are not taught or suggested by Honda whether taken individually or in combination with any

of the other references of record. The same deficiencies noted above with respect to Honda are evident in each of the above identified references. Therefore, Applicants submit that the features of the present invention as recited in the claims are not taught or suggested by any of the references of record whether taken individually or in combination with each other.

6. **Fee (37 C.F.R. 1.17(i))**

The fee required by 37 C.F.R. § 1.17(i) is to be paid by:

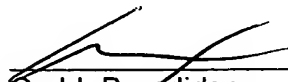[X]   the Credit Card Payment Form (attached) for $130.00.

[   ]   charging Account _____ the sum of $130.00.

A duplicate of this petition is attached.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER & MALUR, P.C., Deposit Account No. 50-1417 (501.43144X00).

Respectfully submitted,

MATTINGLY, STANGER & MALUR, P.C.

Carl I. Brundidge
Registration No. 29,621

CIB/jdc
Enclosures
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September 21, 2004

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RE: Petition-To-Make-Special Search
        For: **DATA TRANSFER METHOD**
        Your Ref. No.: 340201032US01
        Our Ref. No.: HIT 1125

Dear Mr. Otsuka:

We have completed the petition-to-make-special search at the U.S. Patent and Trademark Office regarding the above-identified invention. The field of search covered Class 711, subclasses 114 (U.S. & Foreign), 162 (U.S. & Foreign) and 202 (U.S. & Foreign). Additionally, a computer database search was conducted on the USPTO systems EAST and WEST; a keyword search was conducted in Class 710, subclasses 1, 5, 8 and 72; and Class 711, subclasses 111, 112, 113, 151, 163 and 206; as well as database searching for foreign patens and non-patent literature. Examiner Jack Lane in Class 711 (Art Unit 2188) was consulted in confirming the field of search.

The search was directed towards a data transfer method. In particular, the search was directed towards claims 1-18 of U.S. Patent Application Number 10/663732. The claims describe a data transfer method in a computer system comprising plural computers; plural memory devices; a relay device; and a management device. The management device sets virtual memory areas of the memory devices for the plural computers and holds information on contents of the setting as first information. The relay device holds second information, which is created, based upon the first information. The virtual memory areas correspond to memory areas. The relay device selects one virtual memory area from the second information. The relay device connecting computers and memory devices with each other comprises an interface section; a routing control section; and a management section. The management section holds second information, which is created, based upon information on contents of virtual memory areas. The virtual memory areas correspond to memory areas. The management section selects one virtual memory area from the second information, and performs control of data transfer among the plural memory devices and as further claimed in the disclosure provided.

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Please note the enclosed documents listed in numerical order for convenience:

U.S. Patent Number	Inventor(s)
RE36,989	White
5,787,487	Hashimoto et al.
6,557,073	Fujiwara et al.
6,567,889	DeKoning et al.
6,718,372	Bober

Published Patent Application	Inventor(s)
2003/0177330	Idei et al.
2003/0182501	George et al.
2003/0221063	Eguchi et al.
2004/0030822	Rajan et al.
2004/0064633	Oota
2004/0098537	Serizawa
2004/0103244	Fujimoto et al.*
2004/0103261	Honda et al.*

Foreign Patent Number	Inventor(s)
JP 03-288934	Saito

*Patents assigned to Hitachi

Brief Description Of The Documents:

U.S. Patent Application Number 2004/0103261 (Honda et al.) shows a system and method of controlling data transfer between a host system and a plurality of storage devices. The computer system has a plurality of host computers (1), a plurality of storage devices (3), a virtualization controller (2) that is connected with the host computers (1) and storage devices (3), and a managing unit (4). The host computers (1), storage devices (3) and the managing unit (4) are connected with the virtualization controller (2) via a network (5), while is connected with the virtualization controller (2) via a network (5,6). See figures and paragraphs [0009]-[0012], [0044]-[0048].

U.S. Patent Number 6,557,073 (Fujiwara et al.) shows a storage apparatus including a virtual storage area for storing a virtual tape volume, a data transfer control program for controlling the data transfer among the virtual storage area. See figures and summary.

U.S. Patent Application Number 2004/0103244 (Fujimoto et al.) shows a system for managing method for cluster-type storage comprising plurality of data caching control units, including management units (60) that generate a table in which virtual volume (2) numbers (632) are assigned, on the basis of the tables in all the control clusters (71). Then, a copy of the portion related to each control cluster (71) is transferred from the table to the target data caching control unit (21). See figures, abstract and paragraphs [0021]-[0022].

U.S. Patent Number 2004/0030822 (Rajan et al.) shows a storage virtualization by layering virtual disk objects on a file system comprising an organizing storage of the file system within volumes created among the managed disks; creating the vdisk as a storage object within one of the volumes. See figures and paragraphs [0021]-[0025].

U.S. Patent Numbers RE36,989 (White), 5,787,487 (Hashimoto et al.), 6,567,889 (DeKoning et al.), 6,718,372 (Bober); U.S. Patent Application Numbers 2003/0177330 (Idei et al.), 2003/0182501   (George et al.), 2003/0221063 (Eguchi et al.), 2004/0064633 (Oota), 2004/0098537   (Serizawa), and Japanese Patent Number 03-288934 (Saito) shows data transfer methods in virtualization of disk storage systems.

While the above-noted Examiner was consulted and confirmed our opinion that the most relevant areas for this invention were reviewed, further searching may uncover additional patents. NOTE: The field of search included the most pertinent areas identified by the Examiner and our office as containing relevant patents.
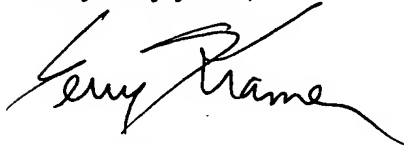
Enclosed are copies of the cited documents and our invoice for services rendered and disbursements for this matter.

Mr. Noboru Otsuka
September 23, 2004
Page Four

As always, if you have any questions regarding this search, please do not hesitate to call us at (703) 413-5000.

Very truly yours,

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TWK/RCP/css
Enclosure

K&A